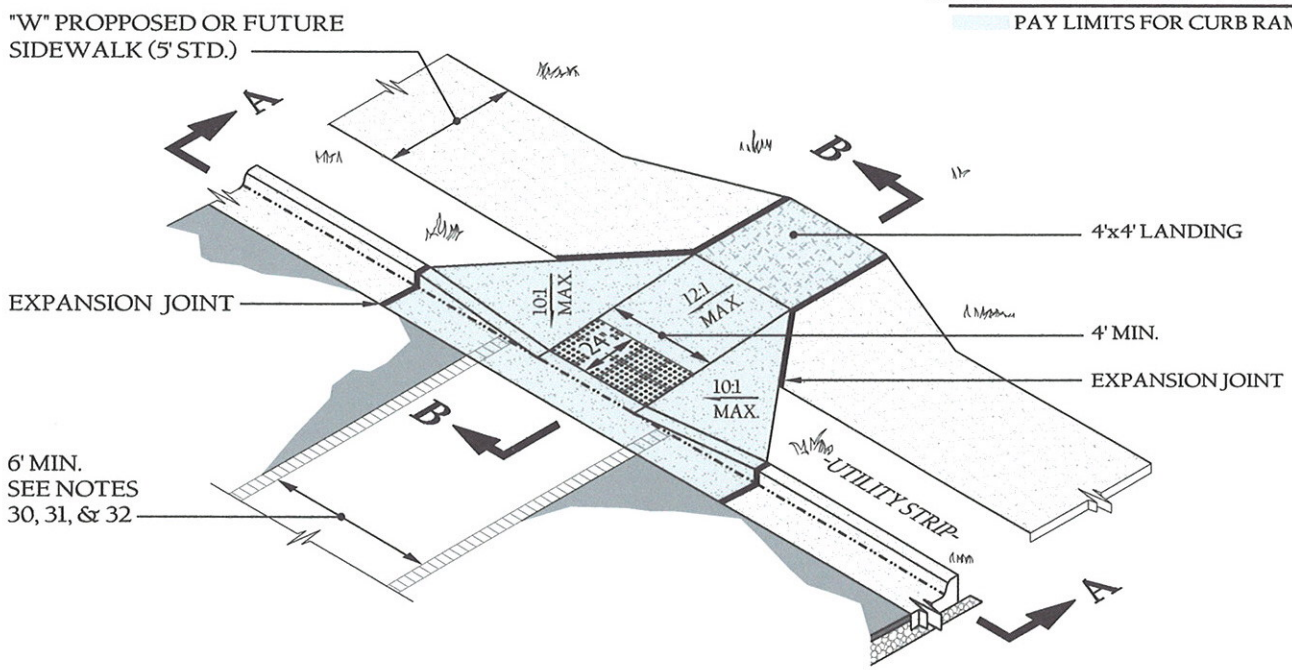
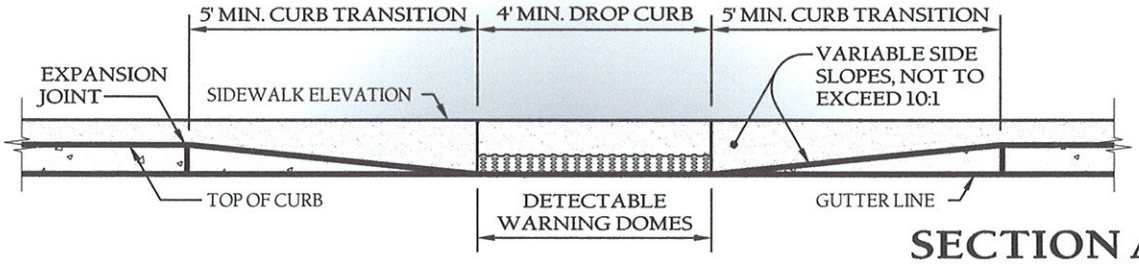
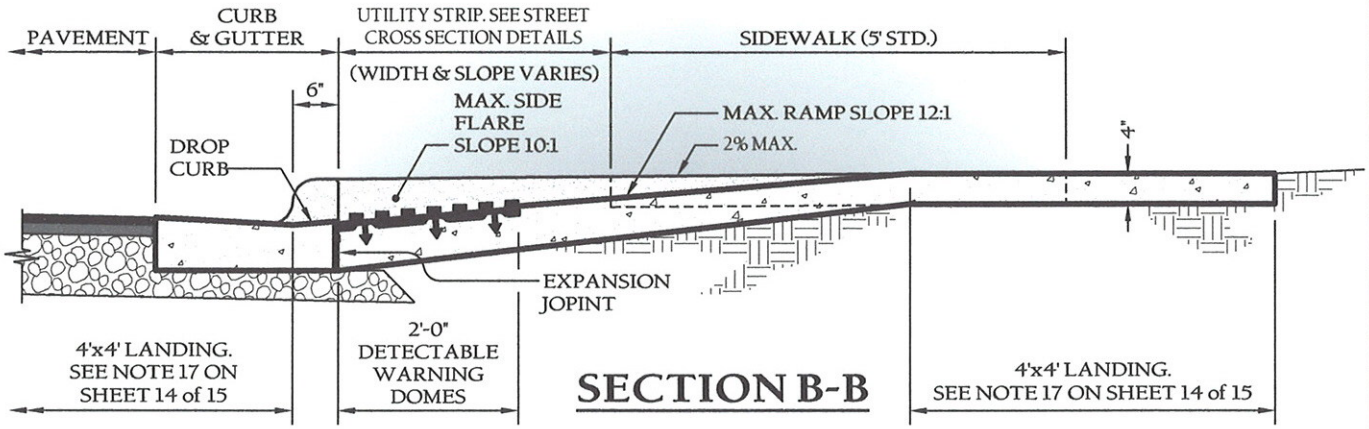
ISOMETRIC VIEW





SECTION A-A



SECTION B-B

NOTES:

1. Detectable warning domes will cover 2'-0" length and full width of the ramp floor as shown on sheet 13 of 15.

TOWN of WAKE FOREST

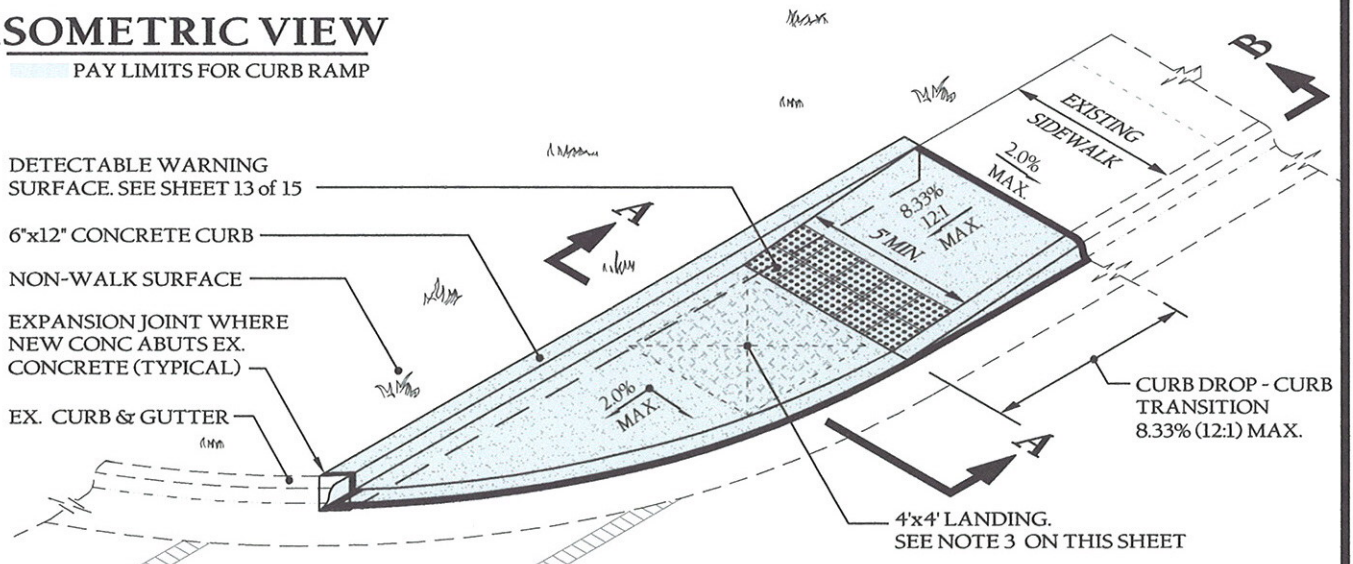
TOWN of WAKE FOREST, NC
Manual of Specifications, Standards and Design

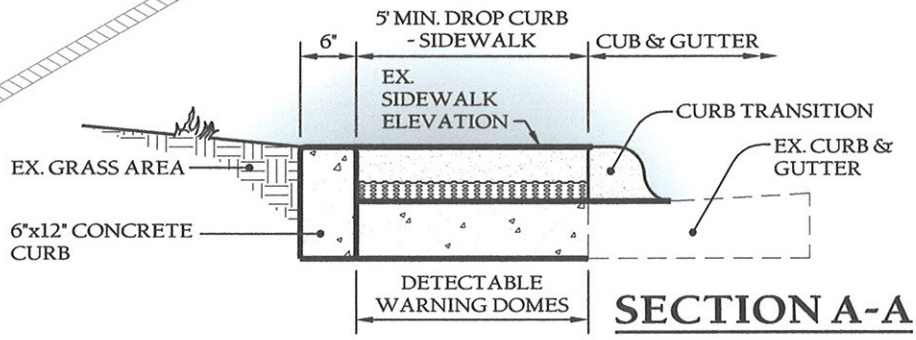
SINGLE CURB RAMP WITH PROPOSED CURB & GUTTER

Scale:	Detail #:
Not To Scale	2.13
Revision Date:	Sheet #:
October, 2013	4 of 15

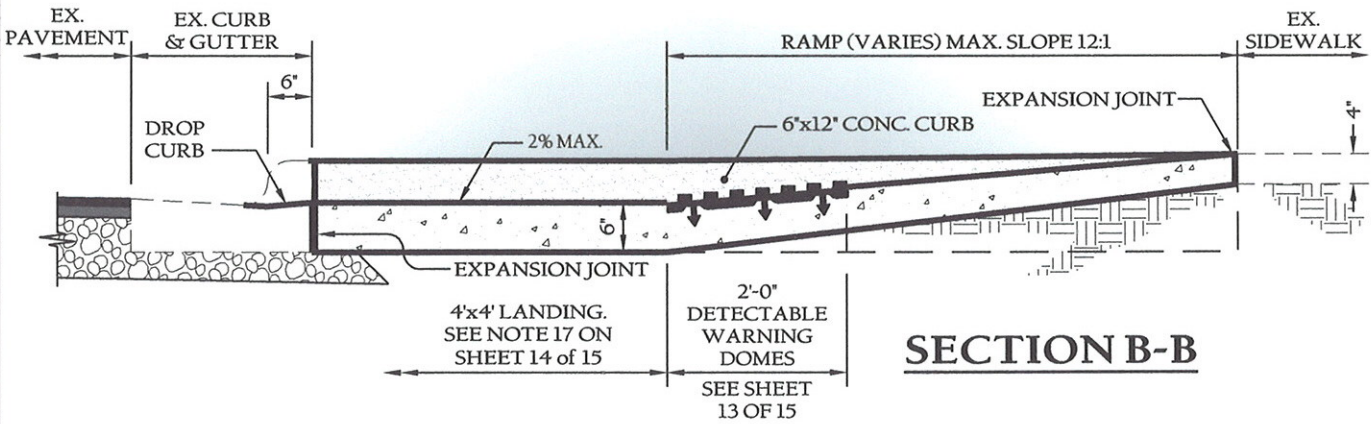
ISOMETRIC VIEW

PAY LIMITS FOR CURB RAMP





SECTION A-A



SECTION B-B

NOTES:

1. Maximum curb ramp slope 8.33% (12:1)
2. Maximum cross slope 2.00%
3. Curb ramps require a (4'-0") minimum landing with a maximum cross slope and longitudinal slope of 2.00% where pedestrians perform turning maneuvers. Slope to drain to curb.
4. Detectable warning domes will cover 2'-0" length and full width of the ramp floor as shown on sheet 13 of 15.
5. Refer to sheet 14 & 15 of 15 for all ramp notes. Adopted from NCDOT Alternate Curb Ramp Details.

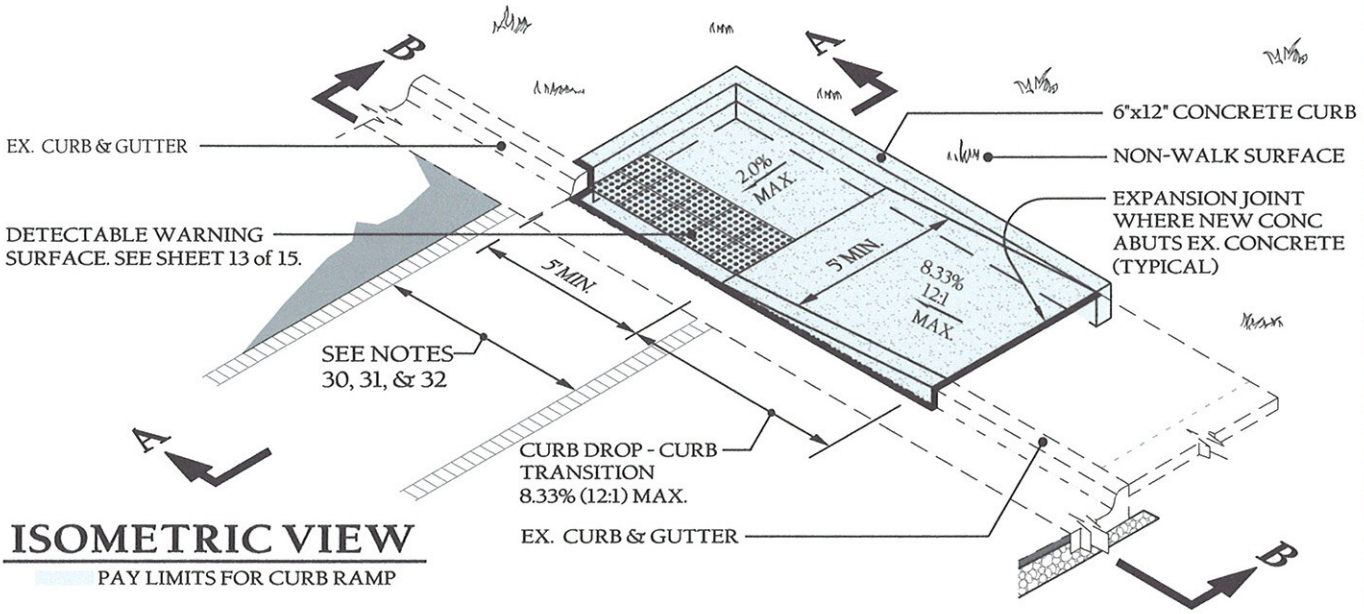
TOWN of WAKE FOREST

TOWN of WAKE FOREST, NC

Manual of Specifications, Standards and Design

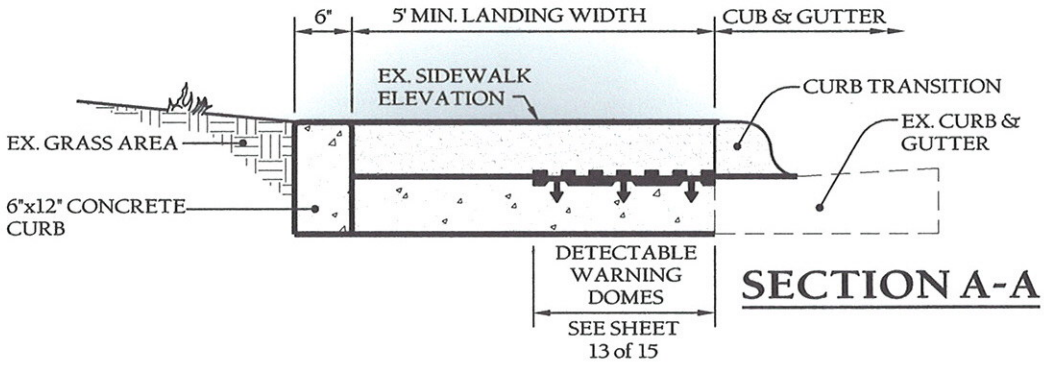
CURB RAMPS - DIRECTIONAL TYPE 1

Scale:	Detail #:
Not To Scale	2.13
Revision Date:	Sheet #:
October, 2013	5 of 15

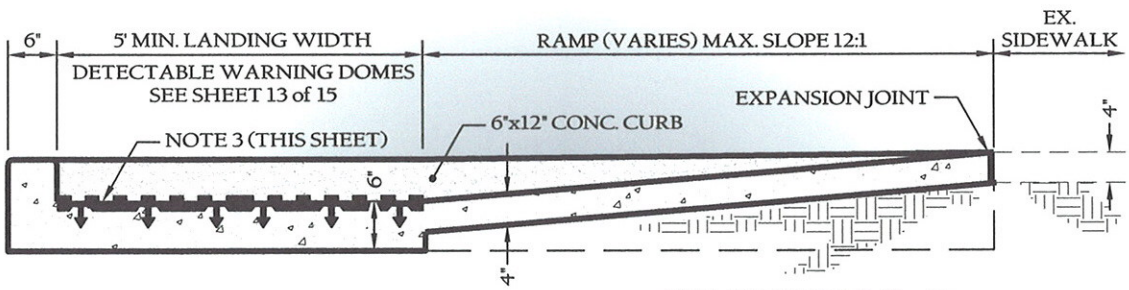


ISOMETRIC VIEW

PAY LIMITS FOR CURB RAMP



SECTION A-A



SECTION B-B

NOTES:

1. Maximum curb ramp slope 8.33% (12:1)
2. Maximum cross slope 2.00%
3. Curb ramps require a (4'-0") minimum landing with a maximum cross slope and longitudinal slope of 2.00% where pedestrians perform turning maneuvers. Slope to drain to curb.
4. Detectable warning domes will cover 2'-0" length and full width of the ramp floor as shown on sheet 13 of 15.
5. Refer to sheet 14 & 15 of 15 for all ramp notes. Adopted from NCDOT Alternate Curb Ramp Details.

TOWN of WAKE FOREST

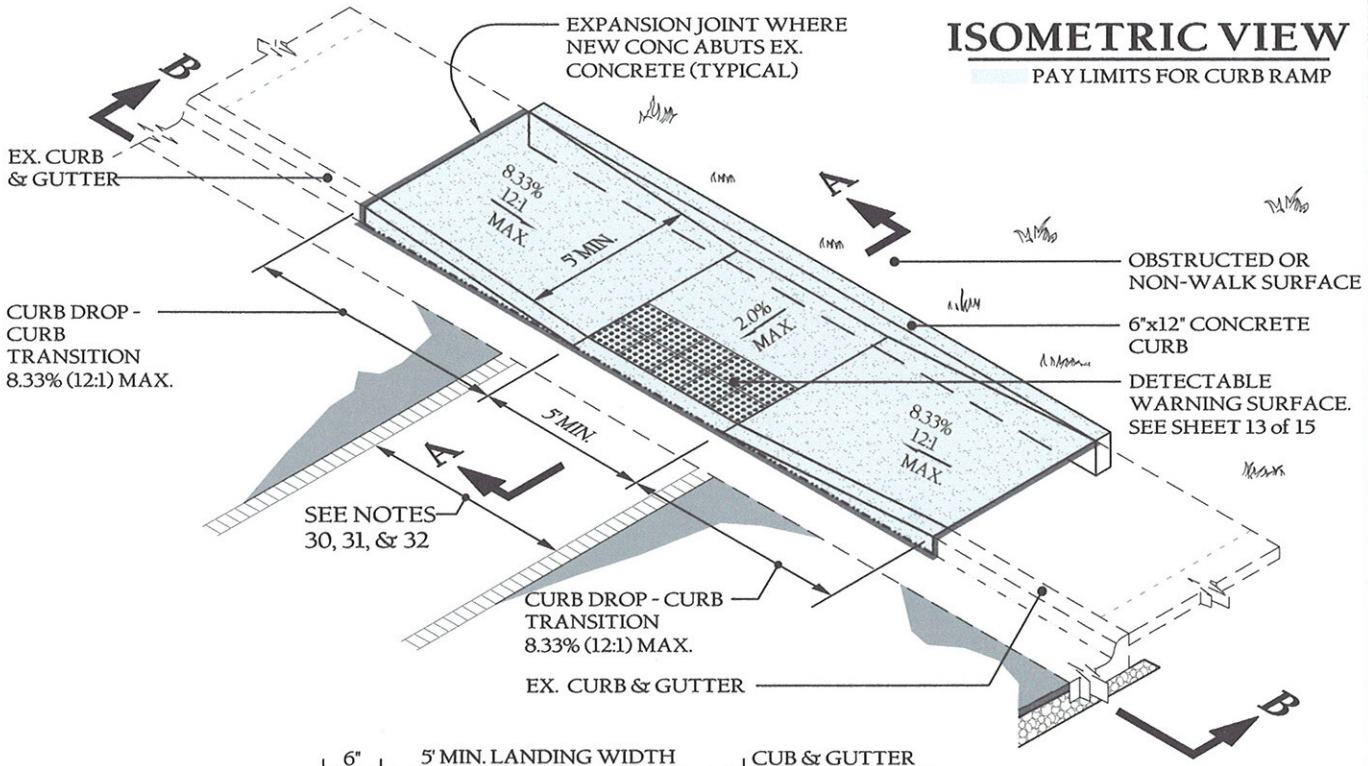
TOWN of WAKE FOREST, NC

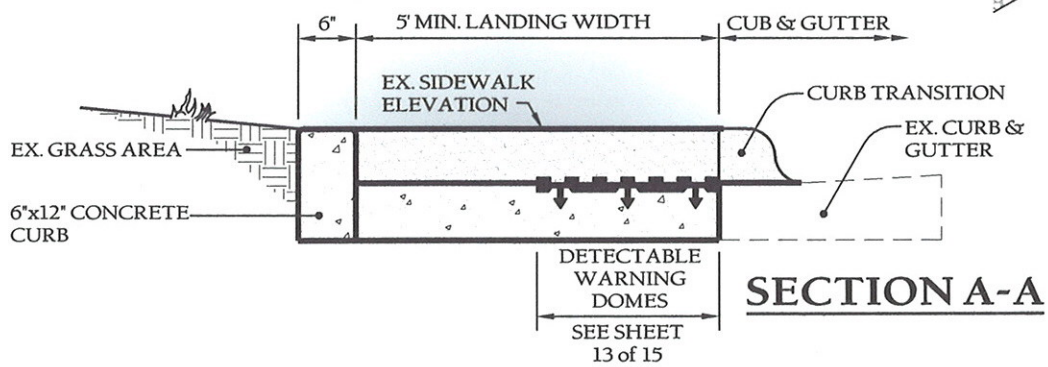
Manual of Specifications, Standards and Design

CURB RAMPS - DIRECTIONAL TYPE 1A

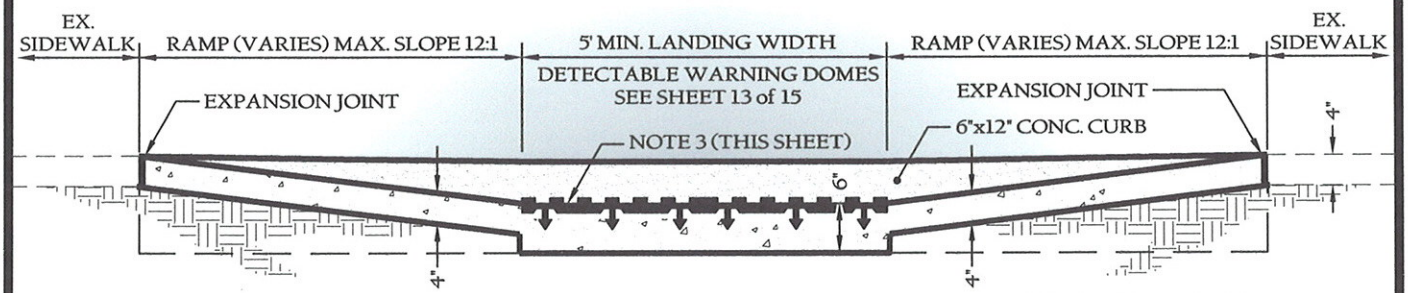
Scale:	Detail #:
Not To Scale	2.13
Revision Date:	Sheet #:
October, 2013	6 of 15

ISOMETRIC VIEW





SECTION A-A



SECTION B-B

NOTES:

1. Maximum curb ramp slope 8.33% (12:1)
2. Maximum cross slope 2.00%
3. Curb ramps require a (4'-0") minimum landing with a maximum cross slope and longitudinal slope of 2.00% where pedestrians perform turning maneuvers. Slope to drain to curb.
4. Detectable warning domes will cover 2'-0" length and full width of the ramp floor as shown on sheet 13 of 15.
5. Refer to sheet 14 & 15 of 15 for all ramp notes. Adopted from NCDOT Alternate Curb Ramp Details.

TOWN of WAKE FOREST

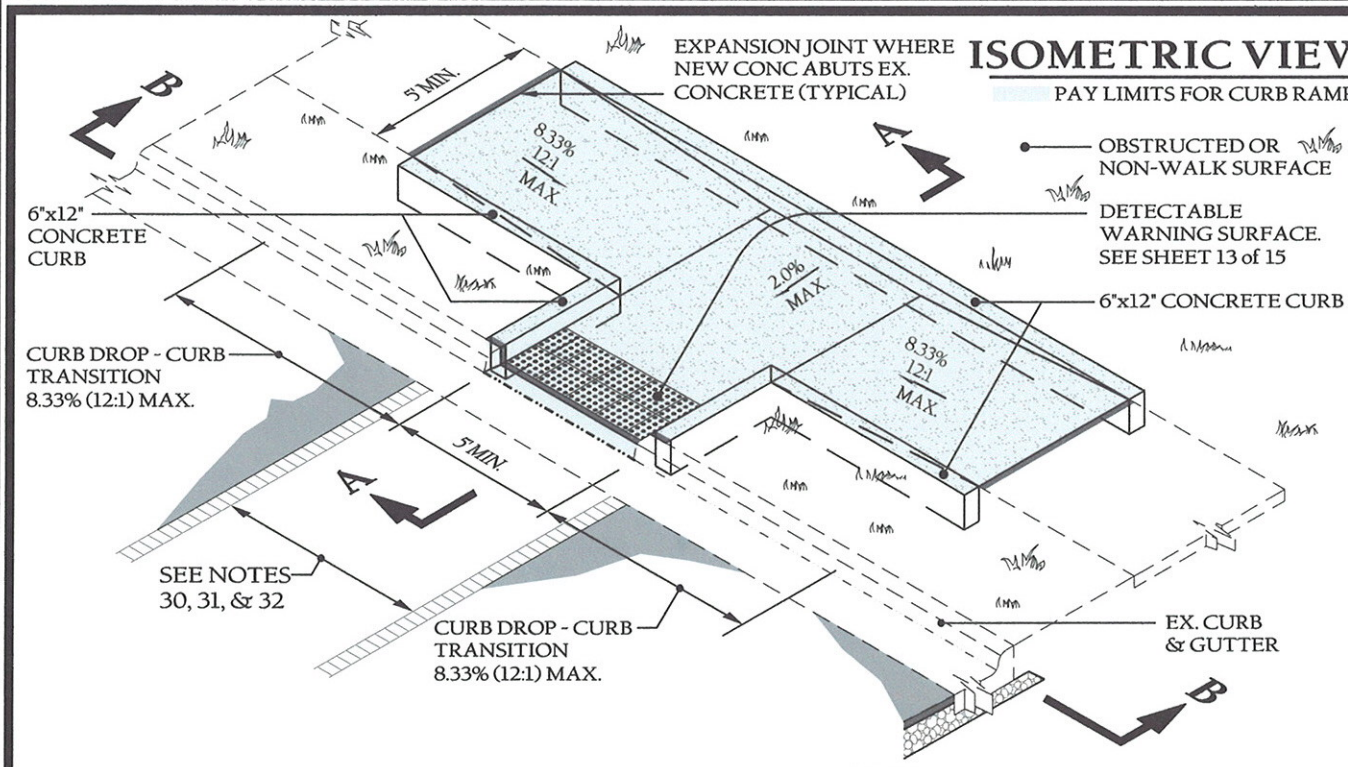
TOWN of WAKE FOREST, NC

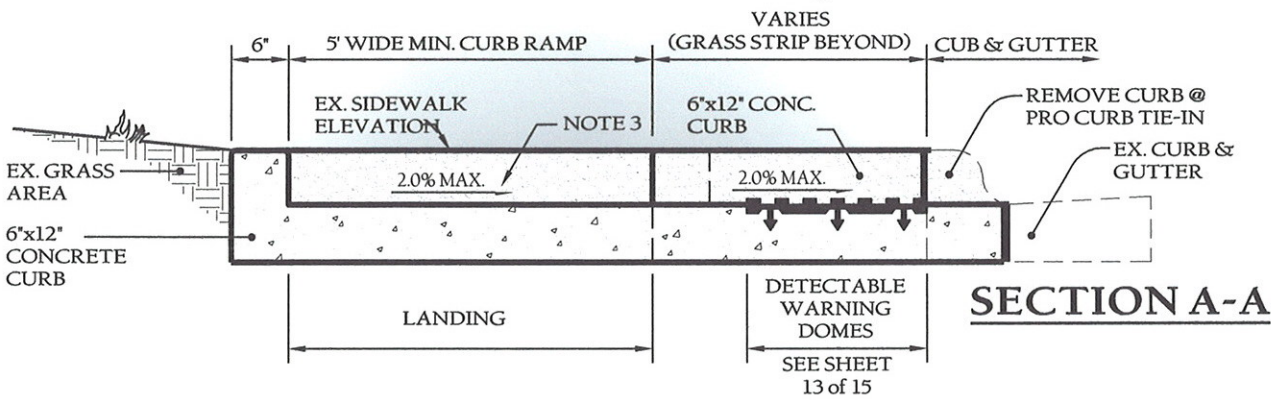
Manual of Specifications, Standards and Design

CURB RAMPS - DIRECTIONAL TYPE 2

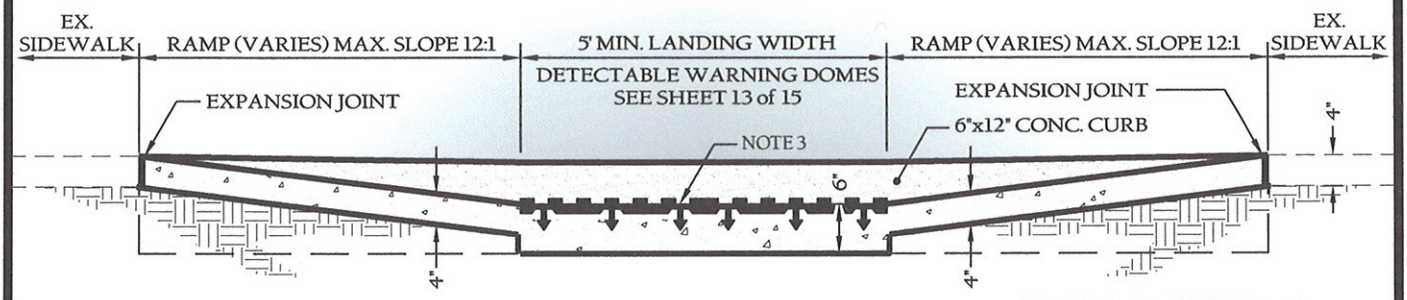
Scale:	Detail #:
Not To Scale	2.13
Revision Date:	Sheet #:
October, 2013	7 of 15

ISOMETRIC VIEW





SECTION A-A



SECTION B-B

NOTES:

1. Maximum curb ramp slope 8.33% (12:1)
2. Maximum cross slope 2.00%
3. Curb ramps require a (4'-0") minimum landing with a maximum cross slope and longitudinal slope of 2.00% where pedestrians perform turning maneuvers. Slope to drain to curb.
4. Detectable warning domes will cover 2'-0" length and full width of the ramp floor as shown on sheet 13 of 15.
5. Refer to sheet 14 & 15 of 15 for all ramp notes. Adopted from NCDOT Alternate Curb Ramp Details.

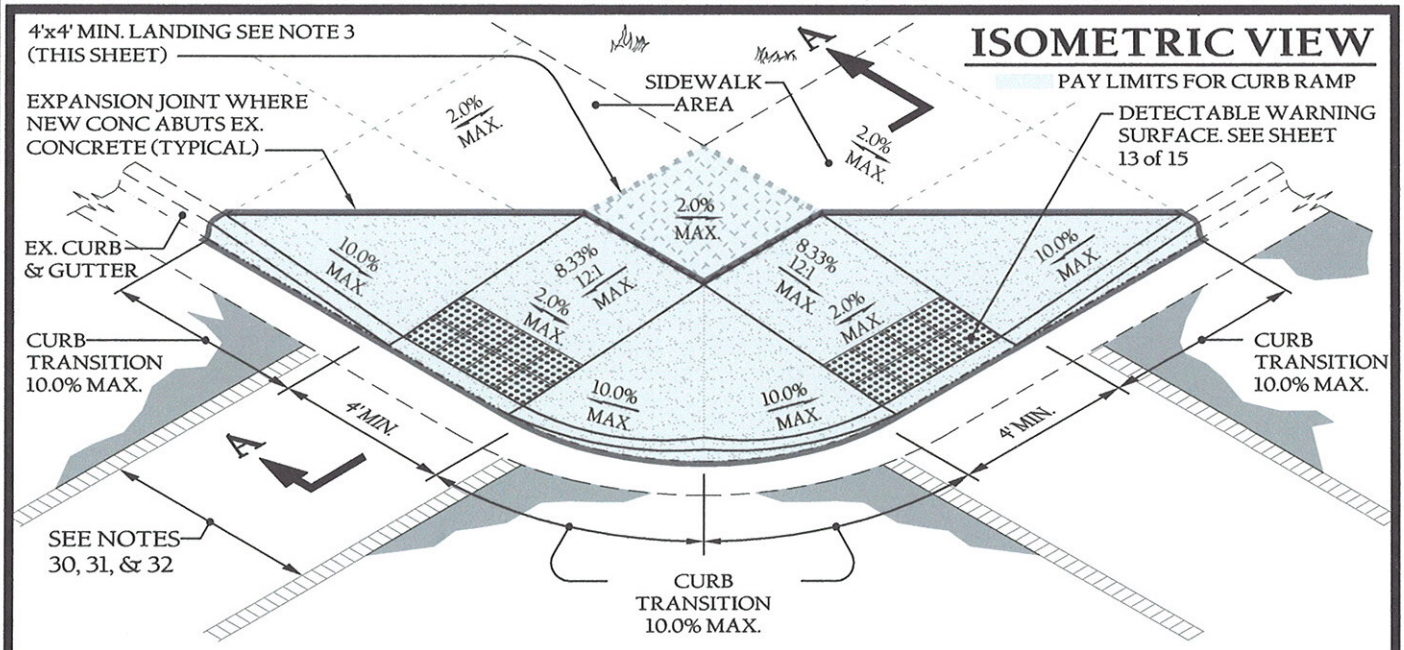
TOWN of WAKE FOREST

TOWN of WAKE FOREST, NC

Manual of Specifications, Standards and Design

CURB RAMPS - DIRECTIONAL TYPE 3

Scale:	Detail #:
Not To Scale	2.13
Revision Date:	Sheet #:
October, 2013	8 of 15



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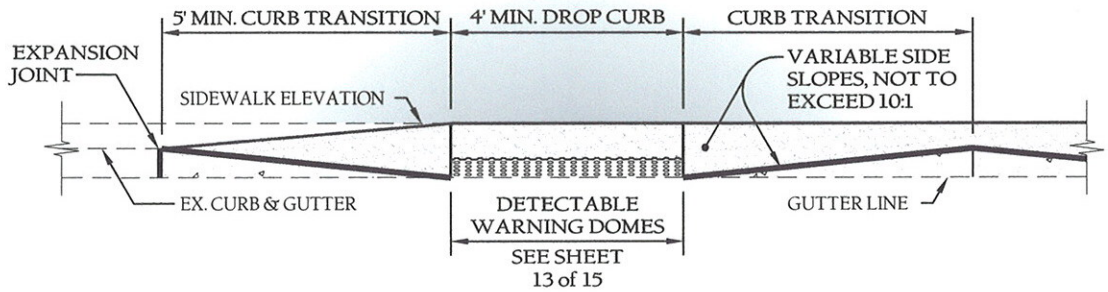
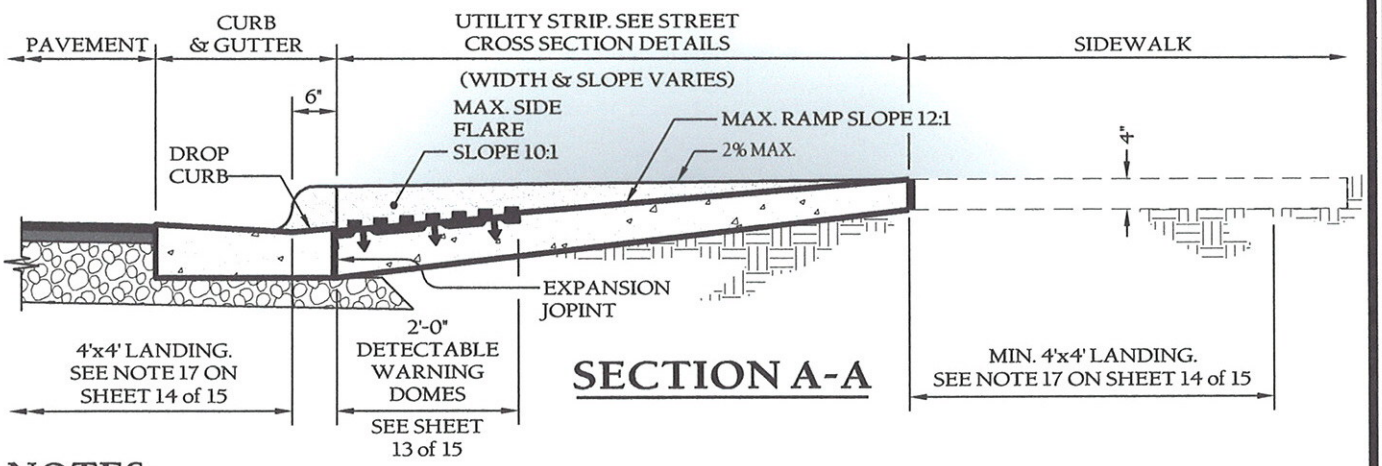


PARTIAL CURB ELEVATION



SECTION A-A

NOTES:

1. Maximum curb ramp slope 8.33% (12:1)
2. Maximum cross slope 2.00%
3. Curb ramps require a (4'-0") minimum landing with a maximum cross slope and longitudinal slope of 2.00% where pedestrians perform turning maneuvers. Slope to drain to curb.
4. Detectable warning domes will cover 2'-0" length and full width of the ramp floor as shown on sheet 13 of 15.
5. Refer to sheet 14 & 15 of 15 for all ramp notes. Adopted from NCDOT Alternate Curb Ramp Details.

TOWN of WAKE FOREST

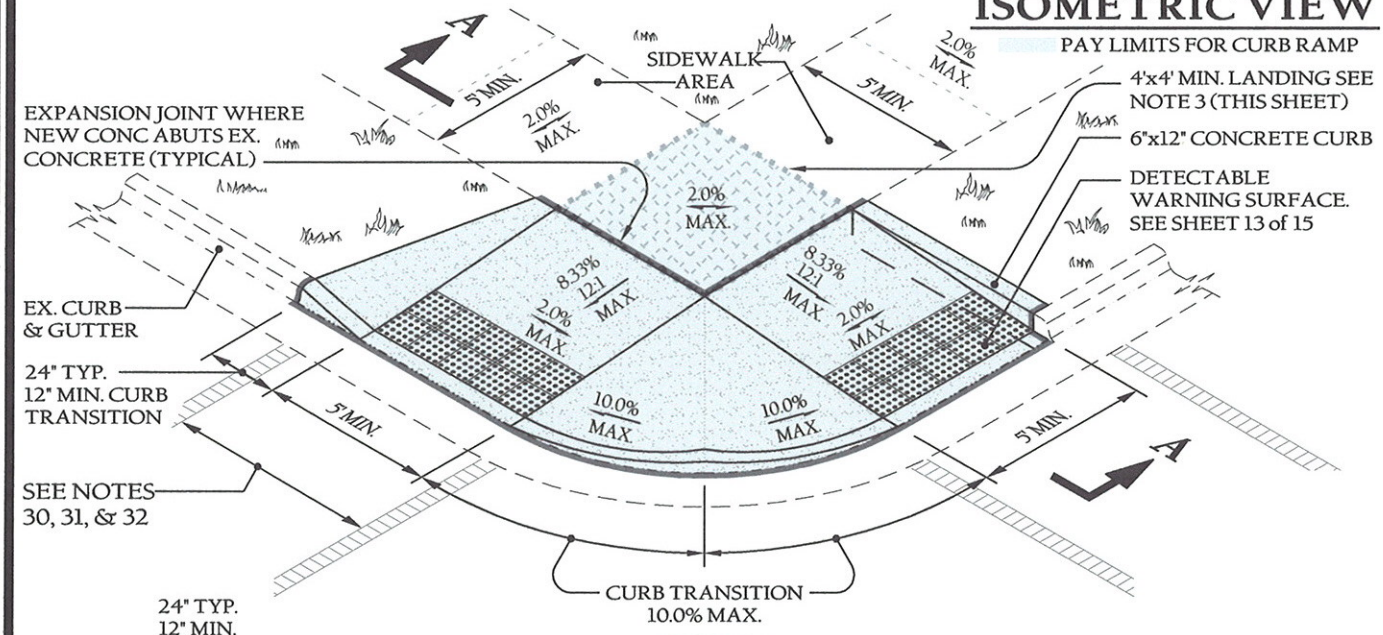
TOWN of WAKE FOREST, NC

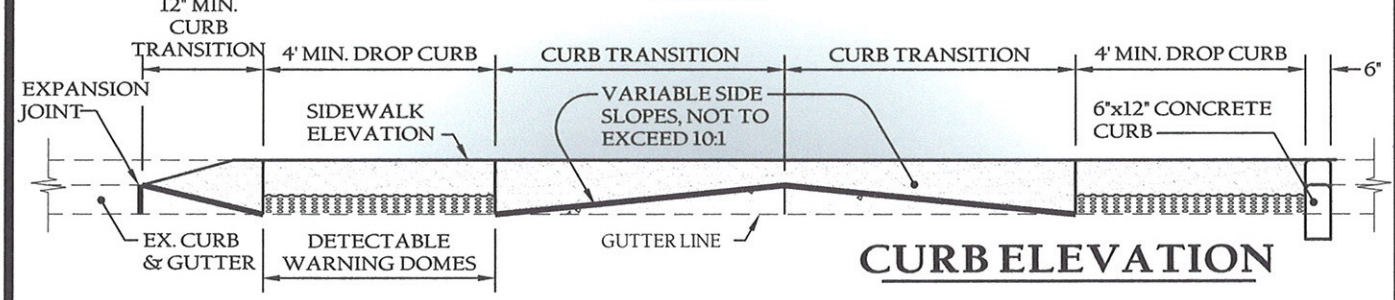
Manual of Specifications, Standards and Design

CURB RAMPS - SHARED LANDING TYPE 4

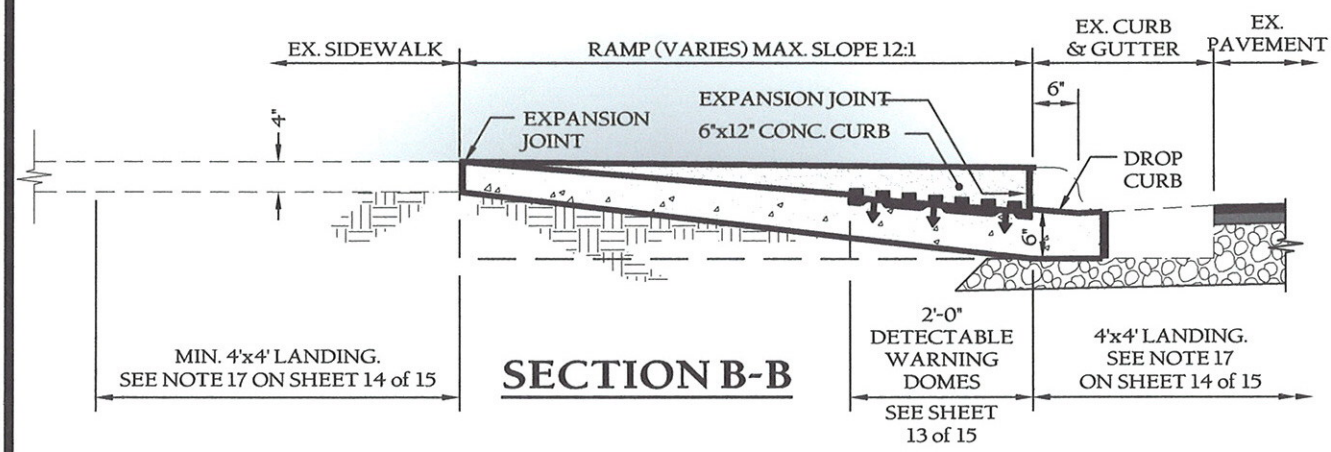
Scale:	Detail #:
Not To Scale	2.13
Revision Date:	Sheet #:
October, 2013	9 of 15

ISOMETRIC VIEW





CURB ELEVATION



SECTION B-B

NOTES:

1. Maximum curb ramp slope 8.33% (12:1)
2. Maximum cross slope 2.00%
3. Curb ramps require a (4'-0") minimum landing with a maximum cross slope and longitudinal slope of 2.00% where pedestrians perform turning maneuvers. Slope to drain to curb.
4. Detectable warning domes will cover 2'-0" length and full width of the ramp floor as shown on sheet 13 of 15.
5. Refer to sheet 14 & 15 of 15 for all ramp notes. Adopted from NCDOT Alternate Curb Ramp Details.

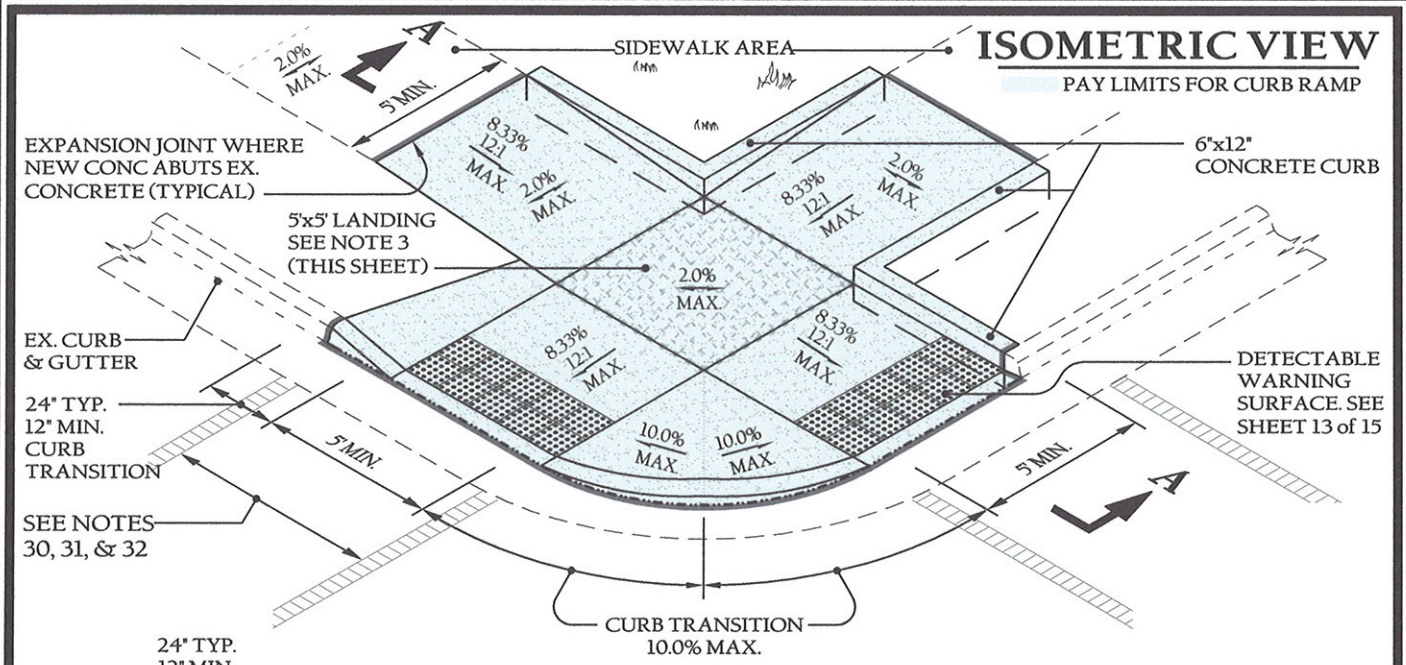
TOWN of WAKE FOREST

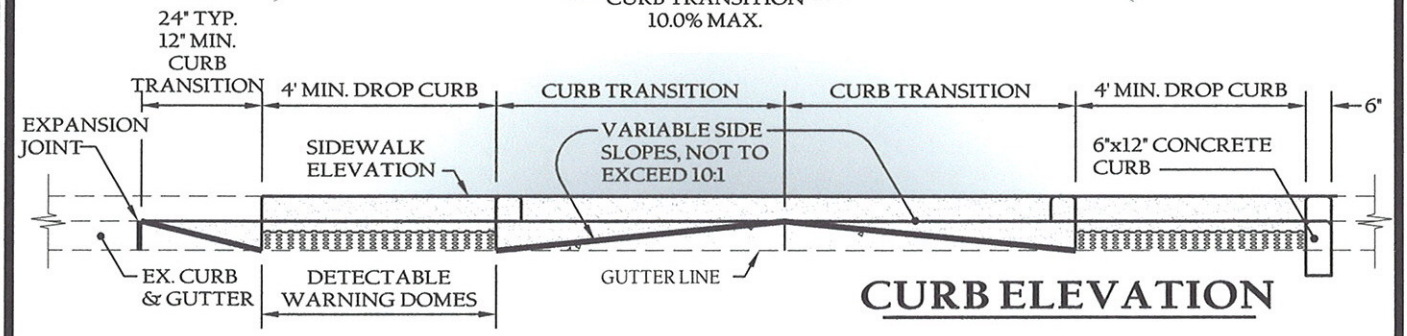
TOWN of WAKE FOREST, NC

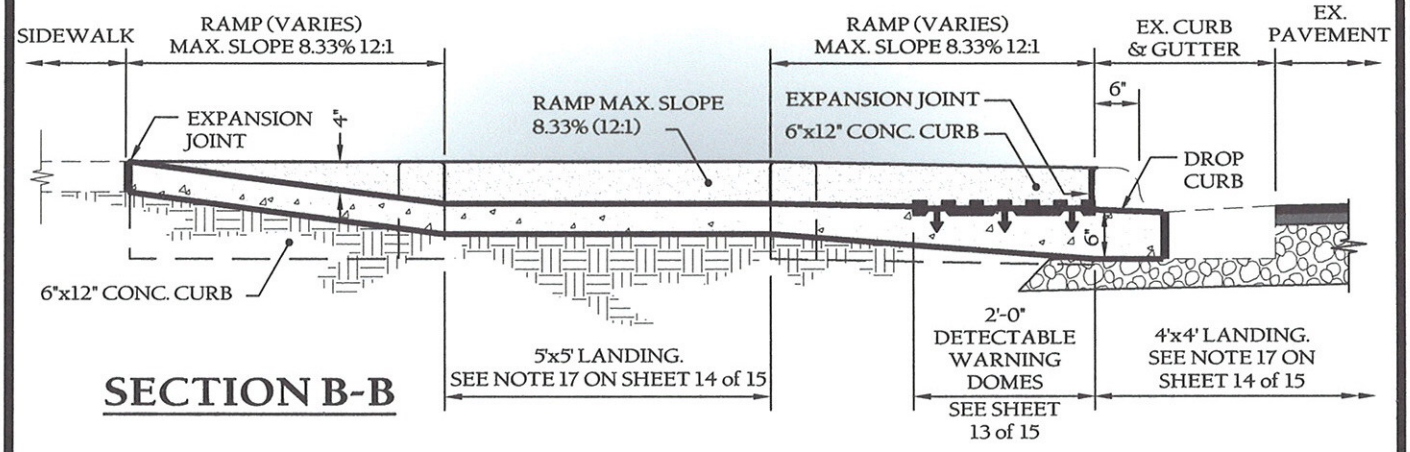
Manual of Specifications, Standards and Design

CURB RAMPS - SHARED LANDING TYPE 4A

Scale:	Detail #:
Not To Scale	2.13
Revision Date:	Sheet #:
October, 2013	10 of 15







NOTES:

1. Maximum curb ramp slope 8.33% (12:1)
2. Maximum cross slope 2.00%
3. Curb ramps require a (4'-0") minimum landing with a maximum cross slope and longitudinal slope of 2.00% where pedestrians perform turning maneuvers. Slope to drain to curb.
4. Detectable warning domes will cover 2'-0" length and full width of the ramp floor as shown on sheet 13 of 15.
5. Refer to sheet 14 & 15 of 15 for all ramp notes. Adopted from NCDOT Alternate Curb Ramp Details.

TOWN of WAKE FOREST

TOWN of WAKE FOREST, NC

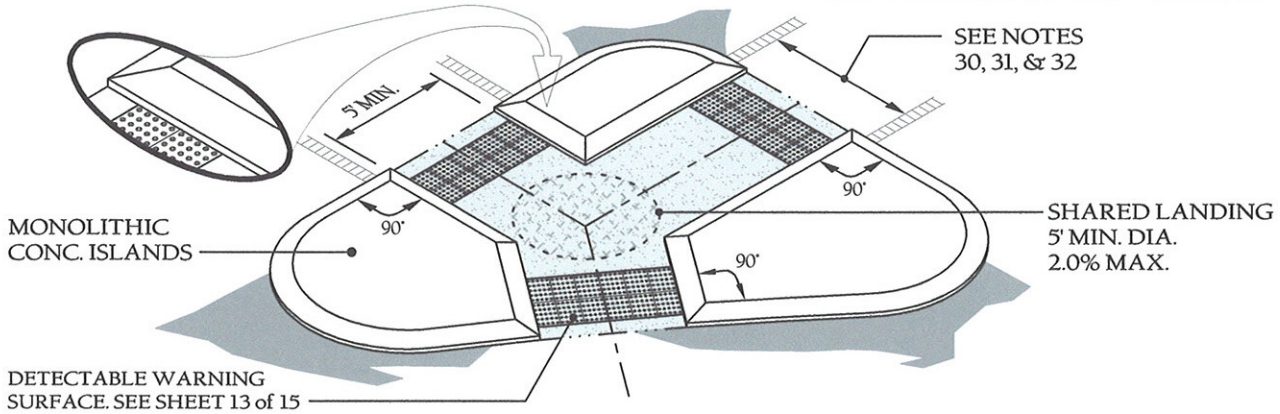
Manual of Specifications, Standards and Design

CURB RAMPS - SHARED LANDING TYPE 5

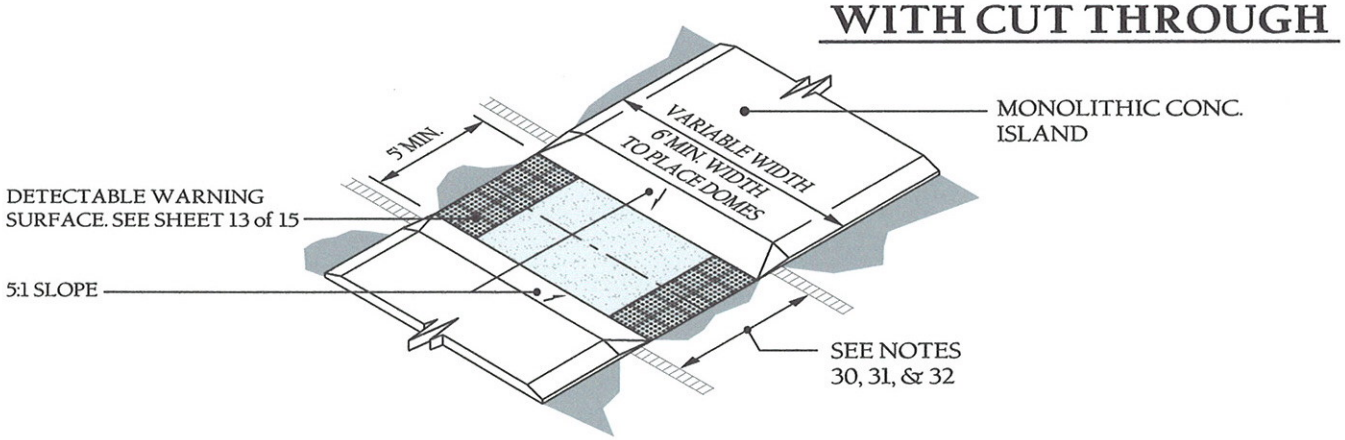
Scale:	Detail #:
Not To Scale	2.13
Revision Date:	Sheet #:
October, 2013	11 of 15

PAY LIMITS FOR CURB RAMP

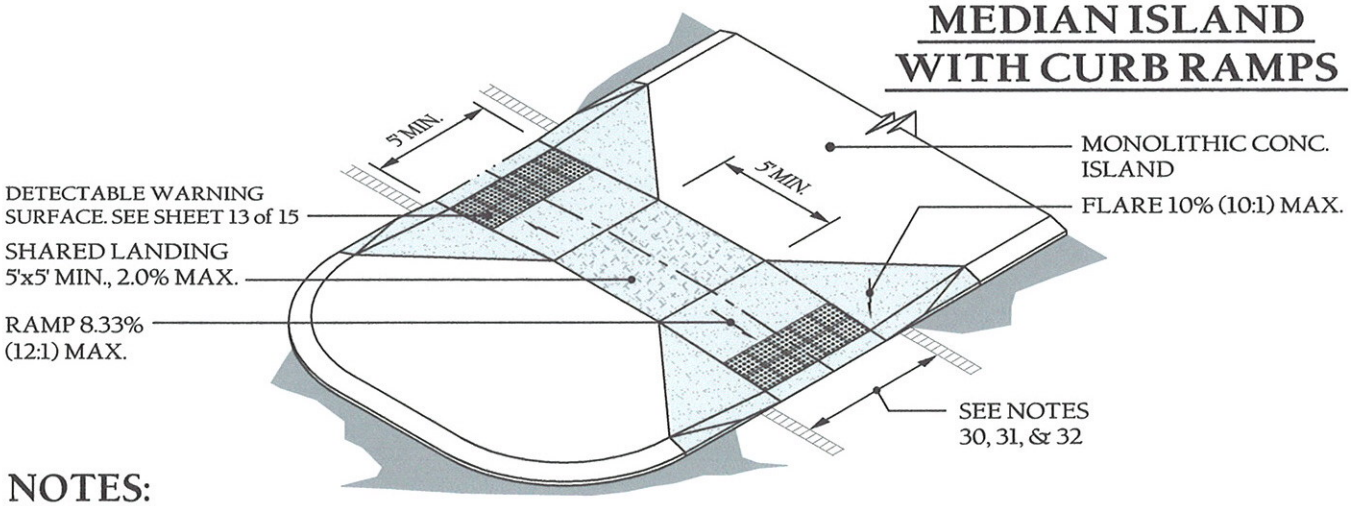
TRIANGULAR ISLAND WITH CUT THROUGH



MEDIAN ISLAND WITH CUT THROUGH



MEDIAN ISLAND WITH CURB RAMPS



NOTES:

1. Maximum curb ramp slope 8.33% (12:1)
2. Maximum cross slope 2.00%
3. Detectable warning domes will cover 2'-0" length and full width of the ramp floor as shown on sheet 13 of 15.
4. See NCDOT Roadway Std. Drawing 852.01 for concrete island dimensions.

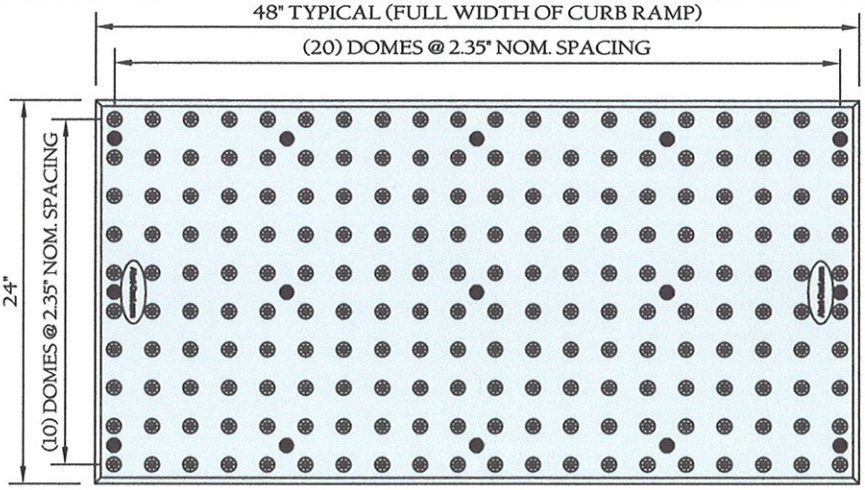
TOWN of WAKE FOREST

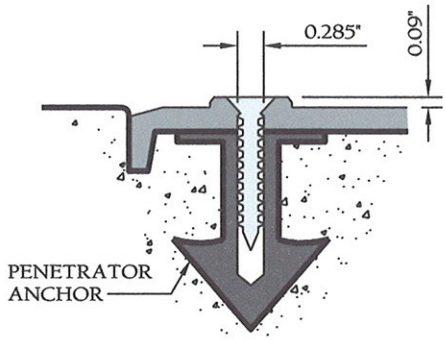
TOWN of WAKE FOREST, NC

Manual of Specifications, Standards and Design

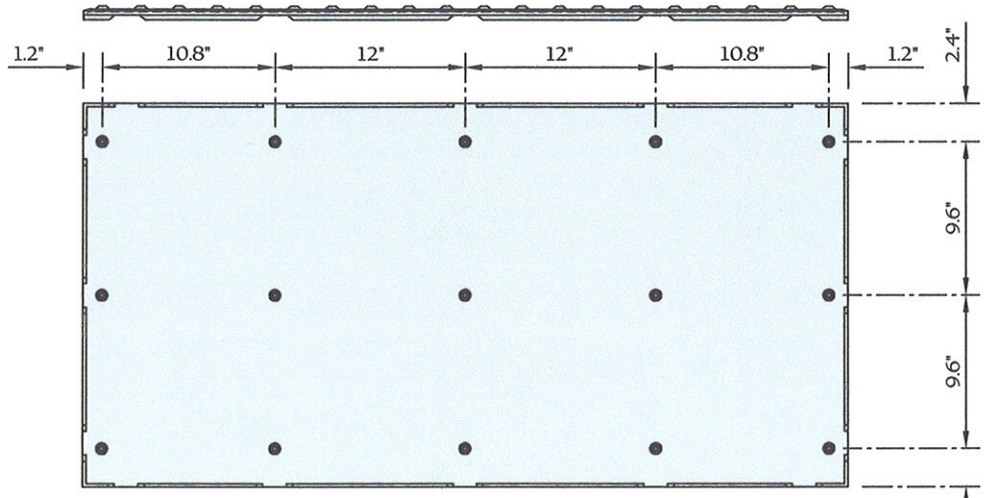
CURB RAMPS MEDIAN ISLANDS

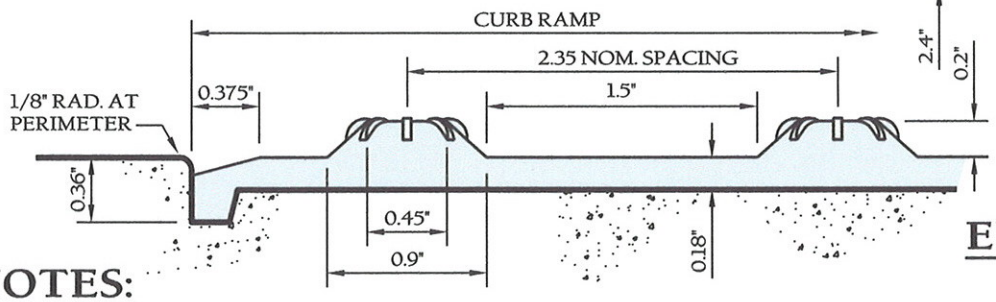
Scale:	Detail #:
Not To Scale	2.13
Revision Date:	Sheet #:
October, 2013	12 of 15





PENETRATOR SECTION





END SECTION

NOTES:

1. Detectable warning System. Cast in place with Penetrator anchors. See pre-approved products list.
2. Other sizes available to meet site specific requirements. Verify with Town.
3. Truncated domes in a detectable warning surface shall have a base diameter of 0.9 inch minimum to 1.4 inches maximum, a top diameter of 50% of the base diameter minimum to 65% of the base diameter maximum, and a height of 0.2 inches.
4. Truncated domes in a detectable warning surface shall have a center-to-center spacing of 1.6 inches minimum and 2.4 inches maximum, and a base-to-base spacing of 0.65 inches minimum, measured between the most adjacent domes on square grid.
5. Detectable warning surfaces shall extend 24 inches minimum in the direction of travel and the full width of the curb ramp, landing, or blended transition. The edge nearest the curb line shall be a minimum of 6 inches and a maximum of 8 inches from curb (ICC/ANSI A117.1 Fig C406.13.2). See notes 21 & 22.
6. See note 23, sheet 5.
7. Any NCDOT street must conform to DOT standard/ADA Curb Ramp detail 848.05 sheet 1-4.

TOWN of WAKE FOREST

TOWN of WAKE FOREST, NC

Manual of Specifications, Standards and Design

STANDARD DETECTABLE WARNING SYSTEM

Scale:	Detail #:
Not To Scale	2.13
Revision Date:	Sheet #:
October, 2013	13 of 15

STANDARD NOTES:

1. North Carolina General Statute 136-44.14 requires that all street curbs being constructed or reconstructed for maintenance procedures, traffic operations, repairs, correction of utilities or altered for any reason after September 1, 1973 shall provide curb ramps for the physically disabled at all intersections where both curb and gutter and sidewalks are provided and at other points of pedestrian flow.
   In addition, section 228 of the 1973 Federal Aid Highway Safety Act requires provision of curb ramps on any curb construction after July 1, 1976 whether a sidewalk is proposed initially or is planned for a future date.
   The Americans with Disability Act (ADA) of 1990 extends to individuals with disabilities. Comprehensive civil rights protections similar to those provided to persons on the basis of race, sex, national origin and religion under the Civil Rights Act of 1964. These curb ramps have been designed to comply with the current ADA standards (2010 ADA Standards for Accessible Design, dated September 15, 2010 & effective March 15, 2012).
2. Curb ramps are required when streets are altered for resurfacing (spanning one intersection to another and includes overlay of additional material to the road surface with or without milling), reconstructed, rehabilitated or widened. Maintenance activities on streets, such as crack filling sealing, pavement markings, surface sealing and pavement patching, are not alterations. However, if there is no block-to-block resurfacing but resurfacing is occurring at a crosswalk itself, partial resurfacing (curb-to-curb resurfacing of a crosswalk) requires the provision of curb ramps at that crosswalk.
   Curb ramps are not required in the absence of a pedestrian walkway with a prepared surface nor are curb ramps required in the absence of curb, elevation or other barrier between the street and the walkway. [USDOJ July 8, 2013]
3. Curb ramps are required at all curb returns.
4. Detectable warning domes are required for curb ramps.
5. Single curb ramp at the center of the return are not permitted.
6. Dimensions assume 90° centerline intersection of streets.
7. Construct the ramp surface to be stable, firm and slip resistant. Located and construct the curb ramp type as shown in these details.
8. Curb ramps shall be constructed perpendicular to the roadway travel lane.
9. Coordinate the curb ramp and pedestrian crosswalk markings so a 4'x4' clear space at the base of the curb ramp will fall within the pedestrian crosswalk lines.
10. Set back distance from inside corner of an intersection crosswalk marking to nearest edge of travel lane is 4 feet minimum.
11. Terminate parking a minimum of 20 feet back of a pedestrian crosswalk.
12. Construct a curb ramps a minimum of 4 feet wide. Width may exceed 48".
13. Construct the running slope of the ramp at a maximum of 8.33% (1 : 12).
14. Allowable cross slope on sidewalks and ramps to be a maximum of 2%.
15. Construct the side flare slope to a maximum of 10% measured along the curb line.;
16. Construct the counter-slope of the gutter or street at the base of the curb ramp at a maximum of 5% and maintain a smooth transition.
17. Construct landings for sidewalk at a minimum of 4'x4' with a maximum slope of 2% in any direction. Construct landings for median islands a minimum of 5'x5' with a maximum slope of 2% in any direction.
18. To use a median island as a pedestrian refuge area, median islands will be a minimum of 6 feet wide. Construct median islands to provide passage over or through the island.
19. Small channelization islands that cannot provide a 5'x5' landing at the top of a curb ramp, will be cut through level with the surface of the street.
20. Curb ramps with returned side curbs may be used only where pedestrians would not normally walk across the ramp such as where there the adjacent surface is plantings, other non-walking surface, or the side approach is substantially obstructed.
21. The typical 2'x4' truncated dome pad shall be placed with the short dimension perpendicular to the curb. See curb ramp typical details. Truncated dome pads shall abutt the back of the curb (ICC/ANSI A117.1 Fig C406.13.2).
22. Curved truncated dome pads are permitted when ramp width is greater than 4 feet.
23. Color contrast required only when detectable warning plates are employed. (ADA Standards for Accessible Design, section 705, Latest Edition). Recommended Min. light reflectance contrast is 70% (American National Standard ICC/ANSI A117.1 - Standard & Commentary Section 705.3, Latest Edition). Painted surface will not be acceptable. (See note 4).
24. Place a 1/2-inch expansion joint where the concrete curb ramp joins/abuts the curb.
25. Curb ramps through median islands, single ramps at dual crosswalks or limited right-of-way situations will be handled by special details. Consult with the Town Engineer.
26. When construction is on a NCDOT Right-of-Way, construction shall conform to the latest edition of the NCDOT Roadway Standard drawings.
27. Construction of curb ramps shall conform to the latest edition of the ICC/ANSI A117, Chapter 4 Accessible Routes.

TOWN of WAKE FOREST

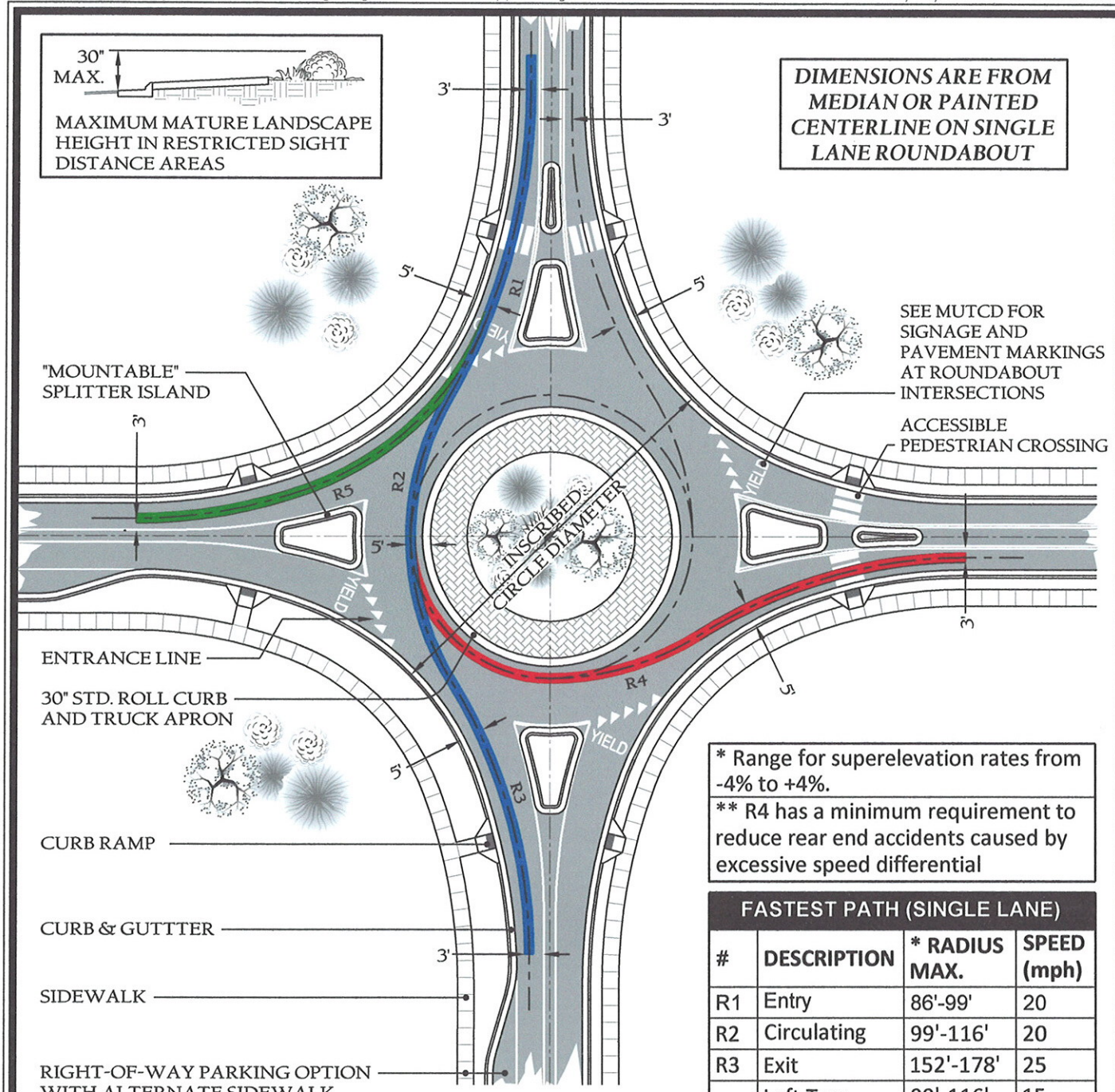
TOWN of WAKE FOREST, NC
Manual of Specifications, Standards and Design

STANDARD NOTES FOR CURB RAMPS

Scale:	Detail #:
Not To Scale	2.13
Revision Date:	Sheet #:
October, 2013	14 of 15

STANDARD NOTES (continued):

28. Curb ramps shall be provided at locations as shown on these plans or as directed by the engineer. Curb ramps shall be located as indicated in these details; however, the location may be adjusted as directed by the engineer where existing light poles, fire hydrants, drop inlets, etc. Affect placement. At these locations, not less than 2 feet of full height curb shall be placed between adjacent ramps.
29. Use air entrained 3000 psi concrete with a sidewalk finish in order to obtain a rough non-skid type surface.
30. Crosswalk widths and configuration vary but must conform to traffic design standards.
31. Place the inside pedestrian crosswalk lines no closer in the intersection then would be established by bisecting the intersection radii, with an allowance of a 4'x4' maneuvering space (2003 ICC/ANSI a117 Commentary. Fig. C406.6 & 406.10) in the vehicular travel way when one ramp is installed.
32. Place all pavement markings in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD) published by the Federal Highway Administration and the North Carolina Supplement to the MUTCD.
33. For asphalt greenways transition greenway to concrete to enable truncated dome placement.
34. Concrete must come from a ready mix concrete truck to ensure mix meets air entrainment requirements. No site mix or sakrete mix allowed.



* Range for superelevation rates from -4% to +4%.

** R4 has a minimum requirement to reduce rear end accidents caused by excessive speed differential

FASTEST PATH (SINGLE LANE)			
#	DESCRIPTION	* RADIUS MAX.	SPEED (mph)
R1	Entry	86'-99'	20
R2	Circulating	99'-116'	20
R3	Exit	152'-178'	25
R4	Left Turn	99'-116'	15
	Minimum **	18'-20'	10
R5	Right Turn	152'-178'	20

NOTES:

1. *Decision Sight Distance (DSD) and Stopping Sight Distance (SSD) must be checked for horizontal and vertical alignment. DSD & SSD are measured along vehicle path.*
2. *SSD for pedestrians measured to point 6' behind curb.*
3. *Refer to the FHWA Technical Summary on Roundabouts for considerations in the design section & implementation of Roundabouts (FHWA-SA-10-006, latest revision).*

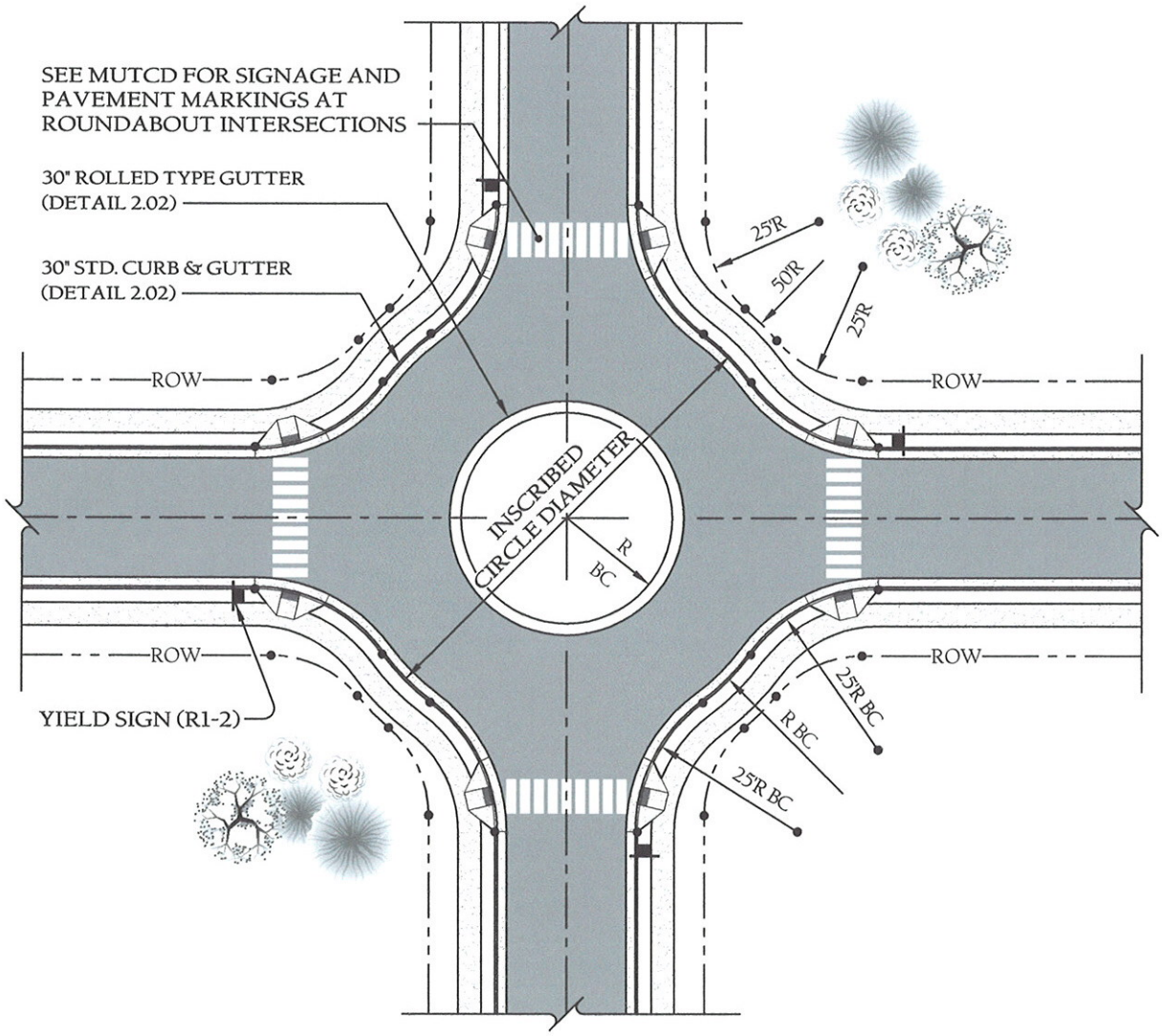
TOWN of WAKE FOREST

TOWN of WAKE FOREST, NC

Manual of Specifications, Standards and Design

ROUNDABOUT STANDARD DETAIL

Scale:	Detail #:
Not To Scale	2.16
Revision Date:	Sheet #:
October, 2013	1 of 2



NOTES:

1. *Decision Sight Distance (DSD) and Stopping Sight Distance (SSD) must be checked for horizontal and vertical alignment. DSD & SSD are measured along vehicle path.*
2. *SSD for pedestrians measured to point 6' behind curb.*
3. *Refer to the FHWA Technical Summary on Roundabouts for considerations in the design section & implementation of Neighborhood Traffic Circles (FHWA-SA-10-006, latest revision).*
4. *Dimensions shown are minimum and to be verified with a traffic design. Coordinate design with Town Engineer.*
5. *R1-2 is a MUTCD sign designations (Manual on Uniform Traffic Control Devices.)*

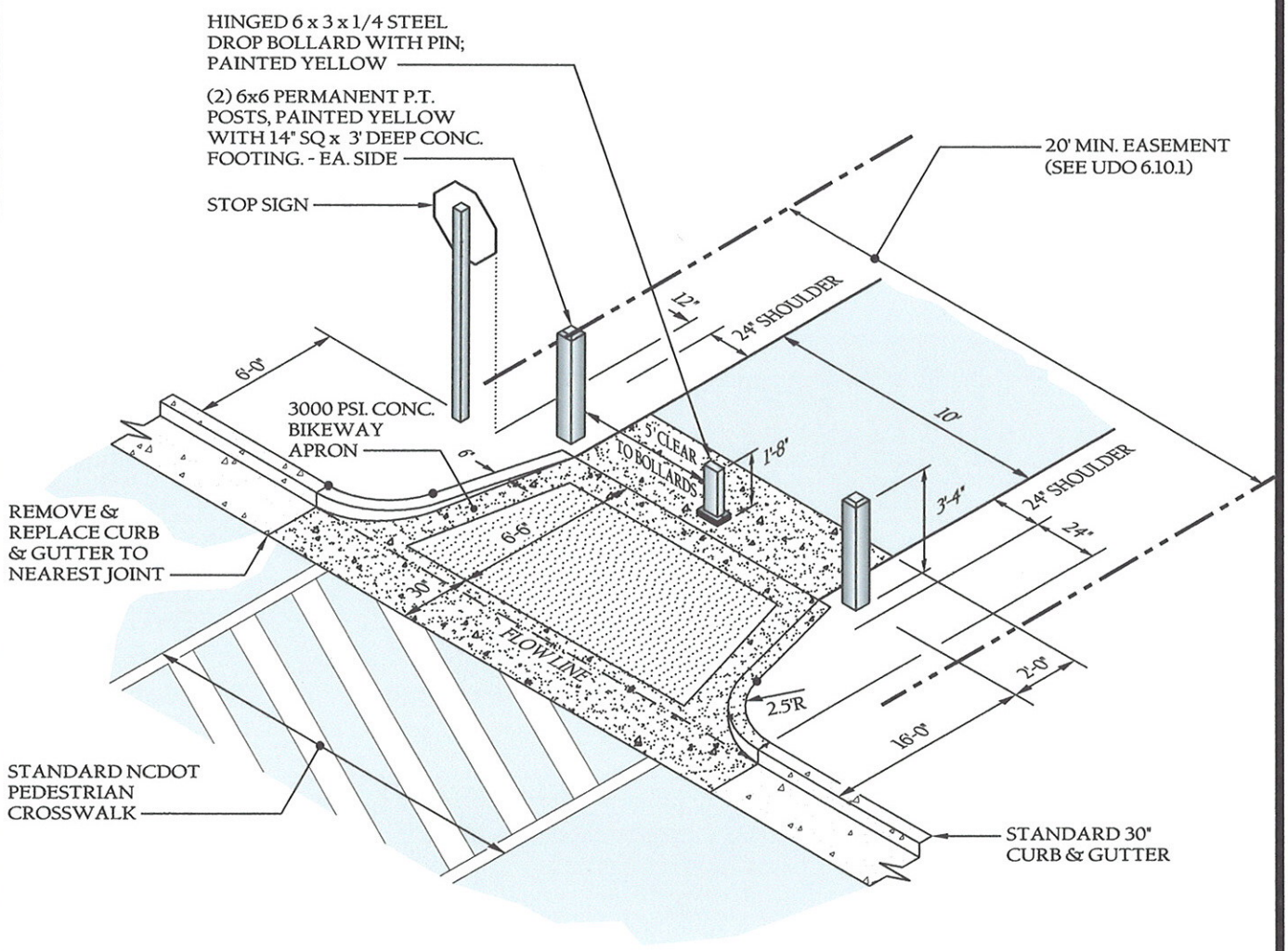
TOWN of WAKE FOREST

TOWN of WAKE FOREST, NC

Manual of Specifications, Standards and Design

ROUNDABOUT STANDARD DETAIL

Scale:	Detail #:
Not To Scale	2.16
Revision Date:	Sheet #:
October, 2013	2 of 2



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TOWN of WAKE FOREST, NC

Manual of Specifications, Standards and Design

MULTI-USE PATH DETAIL

Scale:	Detail #:
Not To Scale	2.17
Revision Date:	Sheet #:
October, 2013	1 of 2